

1 WHAT IS CLAIMED IS:

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- 3 1. A method of expressing a gene product in the gut of an animal, which
- 4 comprises:
- 5 administering a recombinant AAV vector to the gut of said animal, wherein
- 6 said vector comprises a non-AAV gene of interest ligated into an AAV vector.
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- 8 2. The method of Claim 1, wherein said vector is administered dissolved or
- 9 suspended in a liquid pharmaceutically acceptable carrier.
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- 11 3. The method of Claim 2, wherein said liquid carrier comprises an aqueous
- 12 solution.
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- 14 4. The method of Claim 1, wherein said vector is administered in a solid
- 15 pharmaceutically carrier.
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- 17 5. The method of Claim 1, wherein said gene comprises a DNA segment
- 18 encoding a protein operably linked to a promoter operable in said gut.
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- 20 6. The method of Claim 1, wherein said administering is by oral ingestion.
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- 22 7. The method of Claim 1, wherein said administering is by suppository.
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- 24 8. The method of Claim 1, wherein said AAV vector comprises non-AAV DNA
- 25 ligated into an AAV genome in place of or in addition to an AAV DNA sequence
- 26 excluding the first and last 145 basepairs of said AAV genome or non-AAV DNA
- 27 operably linked to a vector comprising a double-D AAV genomic segment consisting of
- 28 165 basepairs including an internal terminal repeat with D segments at both ends.
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- 30 9. The method of Claim 1, wherein said gene comprises a DNA segment
- 31 encoding an anti-sense RNA molecule or a genetic control element.
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1 10. The method of Claim 1, wherein said animal is a bird or mammal.

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3 11. The method of Claim 1, wherein said animal is a human.

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5 12. The method of Claim 1, wherein said DNA segment comprises a  $\beta$ -  
6 galactosidase gene and promoter system.

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